Hochschild cohomology of U(Vir,N=2,3)

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It is well known that the first cohomology group of an algebra is related to its derivations, and the elements of the second one describe its null extensions. Some believe that, in the theory of groups or algebras, we just need the first and the second groups of (co)homology, but it was shown that the elements of the third cohomology group can be applied to describe the obstacles to the construction of extensions. Homological algebra also introduces important numerical invariants in the group theory, e.g., (co)homological dimension and Euler characteristic. So we can say that homological methods allow us to get important information about the structure of an algebra. The notion of Hochschild cohomology of a conformal algebra was given in **??** by using</div> the so-called λ-product.nbsp;</div> It wasnbsp; clear how to establish the correspondence</div> between cohomology and associative conformal algebra extensions. Another (equivalent)</div> definition of Hochschild cohomology given in **??** involves the language of pseudoalgebras.</div> The study of universal structures for conformal algebras was initiated in **??**. The</div> classical theory of finite-dimensional Lie algebras often needs universal constructions like free algebras and universal enveloping algebras. This was a motivation for</div> the development of combinatorial issues in the theory of conformal algebras **??**,**??**.</div> In this paper we prove that:
</div> **1**.The $n-$ cohomology group of the universal (Virasoro)nbsp; conformal algebra , with locallity 2, is trivial, with</div> coefficients in one dimension bimodule.
</div> **2**.The dimension of the second cohomology group of the universal (Virasoro)nbsp; conformal algebra , with locallity 3, is one.
</div> **3**.A the third cohomology group of the universal (Virasoro)nbsp; conformal algebra , with locallity 3, is trivial, with</div> coefficients in one dimension bimodule.</div> </div>

Источники и литература

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